



City of New Haven
CONNECTICUT

STORMWATER
MANAGEMENT PLAN

July 2017

Amended August 2017

Table of Contents

INTRODUCTION	3	6.2	IMPLEMENT MS4 PROPERTY AND OPERATIONS MAINTENANCE	19
SMP STRUCTURE.....	3	6.3	IMPLEMENT COORDINATION WITH INTERCONNECTED MS4s .	21
AREA SUBJECT TO THE PLAN.....	3	6.4	DEVELOP AND IMPLEMENT A PROGRAM TO CONTROL OTHER	SOURCES OF POLLUTANTS TO THE MS4.....
SMP DEVELOPMENT	3	6.5	EVALUATE ADDITIONAL MEASURES FOR DISCHARGES TO	IMPAIRED WATERS
ANNUAL REPORTING	3	6.6	TRACK PROJECTS THE DISCONNECT DCIA.....	22
DESCRIPTION OF MUNICIPALITY	3	6.7	DEVELOP AND IMPLEMENT AN INFRASTRUCTURE REPAIR,	REHABILITATION AND RETROFIT PROGRAM
(1) PUBLIC EDUCATION AND OUTREACH	8	6.8	DEVELOP AND IMPLEMENT PLAN TO IDENTIFY AND PRIORITIZE	RETROFIT PROJECTS.....
1.1 IMPLEMENT PUBLIC EDUCATION PROGRAM.....	8	6.9	DEVELOP AND IMPLEMENT STREET SWEEPING PROGRAM	23
1.2 ADDRESS EDUCATION AND OUTREACH FOR POLLUTANTS OF	9	6.10	DEVELOP AND IMPLEMENT CATCH BASIN CLEANING PROGRAM	23
CONCERN	9	6.11	DEVELOP AND IMPLEMENT SNOW MANAGEMENT PRACTICES .	24
(2) PUBLIC INVOLVEMENT AND PARTICIPATION	10		STORMWATER MANAGEMENT PLAN SIGNATURE	26
2.1 COMPLY WITH PUBLIC NOTICE REQUIREMENTS FOR THE	10		STORMWATER MANAGEMENT PLAN ENGINEERING CERTIFICATION	28
STORMWATER MANAGEMENT PLAN AND ANNUAL REPORTS.....	10			
(3) ILLICIT DISCHARGE DETECTION AND ELIMINATION ..	11			
3.2 DEVELOP LIST AND MAP OF ALL MS4 OUTFALLS AND	11			
INTERCONNECTIONS IN PRIORITY AREAS	11			
3.3 DEVELOP CITIZEN REPORTING PROGRAM	12			
3.4 ESTABLISH LEGAL AUTHORITY TO PROHIBIT ILLICIT DISCHARGES	12			
3.7 DETAILED MS4 INFRASTRUCTURE MAPPING	13			
(4) CONSTRUCTION SITE STORMWATER RUNOFF	14			
CONTROL.....	14			
4.1 IMPLEMENT, UPGRADE AND ENFORCE LAND USE REGULATIONS	14			
TO MEET REQUIREMENTS OF MS4 GENERAL PERMIT	14			
4.2 DEVELOP AND IMPLEMENT PLAN FOR INTERDEPARTMENTAL	15			
COORDINATION OF SITE PLAN REVIEW AND APPROVAL	15			
4.3 REVIEW SITE PLANS FOR STORMWATER QUALITY CONCERNS..	15			
4.4 CONDUCT SITE INSPECTIONS.....	15			
4.5 IMPLEMENT PROCEDURE TO ALLOW PUBLIC COMMENT ON SITE	15			
DEVELOPMENT	15			
4.6 IMPLEMENT PROCEDURE TO NOTIFY DEVELOPERS ABOUT DEEP	16			
CONSTRUCTION STORMWATER PERMIT	16			
(5) POST-CONSTRUCTION STORMWATER MANAGEMENT	17			
IN NEW DEVELOPMENT OR REDEVELOPMENT	17			
5.1 UPDATE LEGAL AUTHORITY AND GUIDELINES REGARDING LID	17			
AND RUNOFF REDUCTION IN SITE DEVELOPMENT PLANNING	17			
5.2 IMPLEMENT LONG-TERM MAINTENANCE PLAN FOR	18			
STORMWATER BASINS AND TREATMENT STRUCTURES	18			
5.3 DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA) MAPPING	18			
5.4 ADDRESS POST-CONSTRUCTION ISSUES IN AREAS WITH	18			
POLLUTANTS OF CONCERN.....	18			
(6) POLLUTION PREVENTION / GOOD HOUSEKEEPING ..	19			
6.1 DEVELOP AND IMPLEMENT FORMAL EMPLOYEE TRAINING	19			
PROGRAM.....	19			

Introduction

This Stormwater Management Plan (SMP) was developed by the City of New Haven to protect water quality and reduce the discharge of pollutants from the municipality's storm sewer system to the maximum extent practicable (MEP). This SMP addresses the requirements established by the CT Department of Energy and Environmental Protection's (DEEP) General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit). This permit is the local enforcement mechanism of the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Rule.

SMP Structure

The plan outlines a program of best management practices (BMPs), measurable goals, responsible individuals or departments, and implementation schedules for the following six minimum control measures:

- (1) Public education and outreach
- (2) Public involvement and participation
- (3) Illicit discharge detection and elimination
- (4) Construction site stormwater runoff control
- (5) Post-construction stormwater management in new development and redevelopment
- (6) Pollution prevention/good housekeeping

The current and previous CT DEEP General Permit for the Discharge of Stormwater from Small MS4s can be found on DEEP's website (http://www.ct.gov/deep/cwp/view.asp?a=2721&q=558562&deepNav_GID=1654).

Area Subject to the Plan

The measures identified in this SMP will be applied throughout the boundaries of the City of New Haven except as otherwise noted and be consistent with the MS4 General Permit requirements. Stormwater discharge from municipally-owned maintenance garages, salt sheds and other facilities subject to the DEEP Industrial Stormwater General Permit will continue to be regulated under the conditions of that permit.

SMP Development

A stormwater committee led by the Engineering Department and including representatives from the Department of Public Work, City Plan Department, and Department of Parks and Recreation was assembled to coordinate the development and implementation of the SMP.

Annual Reporting

The SMP's implementation will be tracked and documented in Annual Reports summarizing stormwater management activities carried out by the City and its partners. These reports will be submitted to DEEP on an annual basis no later than April 1.

Description of Municipality

The operator of the MS4 is the City of New Haven. The City of New Haven is a public entity located in the county of New Haven, State of Connecticut. The City of New Haven covers an area of approximately 18.7 square miles along the south-central coast of Connecticut. The City had a population of 129,890 according to the 2010 Census and the entire geographic area is considered to be urbanized.

The City of New Haven lies at the intersection of Interstates 95 and 91. The Connecticut Department of Transportation (DOT) operates an MS4 on state highways located in the City of New Haven. This system is regulated under the CT DOT's MS4 permit. Southern Connecticut State University may have a MS4 permit. Implementation of the BMPs identified in this plan will be coordinated between New Haven and CT DOT [and SCSU if applicable].

Impaired Waters

Several surface water bodies are present and flow through the borders of the City of New Haven, including the West River, Hemmingway Creek, Wintergreen Brook and Edgewood Pond. These waterbodies along with estuarine portions of the Quinnipiac, Mill, and West Rivers and New Haven Harbor have been identified as impaired by the DEEP. Stormwater runoff quality impacts the quality of these receiving streams.

In preparing the SMP, the CT DEEP’s Water Quality Standards were reviewed in order to determine the Surface Water Quality Classifications for each watercourse in City. Certain BMP’s address the watersheds containing watercourses designated as “impaired” by the CT DEEP. Table 1 shows the water quality classification for each watershed. Table 2 summarizes the water bodies within or that run through the municipality that are listed on the 2014 List of Connecticut Water Bodies not meeting water quality standards and are designated as “impaired”.

TABLE 1 Water Quality Surface Classifications New Haven, CT			
Drainage Basin Number	Name	Surface Water Quality Classification	Impaired per Water Quality Standards
5200-23_01	Hemmingway Creek	A	Yes
5304-00_01	Wintergreen Brook	A	Yes
5304-00_02	Wintergreen Brook	A	Unassessed
5304-00_03	Wintergreen Brook	A	Unassessed
5305-00_01	West River	A	Yes
5305-00_3	Edgewood Pond	A	Yes
CT-C1-012	Estuary- LIS CB Inner- West River (upper)	SA	Yes
CT-C1_015	Estuary- LIS CB Inner- West River Lower, West Haven	SB	Yes
CT-C1_013	Estuary- LIS CB Inner- New Haven Harbor	SB	Yes
CT-C1_022	Estuary- LIS CB Inner- Mill River (mouth)	SB	Yes
CT-C1_014	Estuary- LIS CB Inner- Quinnipiac River (mouth)	SB	Yes
CT-C2_017	Estuary- LIS CB Shore- Morris Cove	SB	Yes
CT-C1_012	Estuary- LIS CB Shore- Morris Creek	SA	Yes

TABLE 2 City of New Haven Impaired Waterbody

Waterbody ID	Water Segment Description	Water Segment Size	Impaired Use	Pollutant	Cause/Potential Source
Quinnipiac River Watershed – Surface Water Quality Classification – A					
CT5200-23_01 Hemmingway Creek	From saltwater limit (200m downstream of Quinnipiac Ave crossing, just downstream of railroad crossing), New Haven, upstream to Golf Pond outlet dam, East Haven	0.74 miles	Aquatic life, recreation-unassessed	Bacteria, Hg	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
West River Watershed – Surface Water Quality Classification – A					
CT5304-00_01 Wintergreen Brook	Mouth on West River, downstream of Blake Street crossing and upstream to confluence with Wilmot Brook (upstream of Wilmot Road crossing)	1.42 miles	Recreation, Aquatic life-unassessed	E. Coli, Hg	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
CT5305-00-3-L1_01 Edgewood Pond	Pond along eastern bank of West River, just upstream of Chapel St	2.72 acres	Recreation	E. Coli, Hg	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
CT5305-00_01 West River	From head of tide gates at Chapel Street crossing upstream to Konolds Pond outlet dam (just upstream of Bradley Road crossing)	3.23 miles	Aquatic life, recreation	Bacteria, Hg	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other

South Central Shoreline – Surface Water Quality Classification – SA/SB					
CT-C1_022 Estuary- LIS CB Inner- West River (upper)	From Route 1 crossing upstream past Route 34 crossing to southside of Edgewood Ave (near Edgewood Park Pond), West Haven	0.06 sq. miles	Aquatic life, recreation, shellfish	Dissolved oxygen, nutrient/eutrophication, biological indicators, oil and grease, PCBs, enterococcus, fecal coliform	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
CT-C1_015-SB Estuary- LIS CB Inner- West River Lower, West Haven	From mouth just downstream of I-95 crossing (City Point, New Haven Harbor), upstream to Route 1 crossing, West Haven	0.07 sq. miles	Aquatic life, recreation, shellfish-unassessed	Dissolved oxygen, nutrient/eutrophication, biological indicators, oil and grease, PCBs, enterococcus,	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
CT-C1_023-SB Estuary- LIS CB Inner- Mill River (mouth)	From mouth at confluence with Quinnipiac River (Chapel St crossing), New Haven upstream to Footbridge crossing (just upstream of East Rock Road crossing), Hamden	0.07 sq. miles	Aquatic life, recreation, shellfish	Fecal coliform, dissolved oxygen	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
CT-C1_013-SB Estuary- LIS CB Inner- New Haven Harbor	Inner New Haven Harbor from Sandy Point to I-95 crossing (mouth of Quinnipiac and Mill Rivers and mouth of West River)	2.34 sq. miles	Aquatic life, recreation, shellfish	Dissolved oxygen, nutrient/eutrophication, biological indicators, oil and grease, PCBs,	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
CT-C1_014-SB Estuary- LIS CB Inner- Quinnipiac River (mouth)	From mouth at I-95 crossing upstream Quinnipiac River to Sackett Point Road including Mill River mouth below Chapel Street crossing	0.63 sq. miles	Aquatic life, recreation, shellfish-unassessed	Dissolved oxygen, nutrient/eutrophication, biological indicators, oil and grease, PCBs,	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other

CT-C2_017-SB Estuary- LIS CB Shore- Morris Cove	From Black Rock to Morgan Point area including Lighthouse Point Beach (out approximately 1000 feet offshore)	0.59 sq. miles	Aquatic life	Dissolved oxygen, nutrient/eutrophication, biological indicators, oil and grease, PCBs	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other
CT-C1_012 Estuary- LIS CB Shore- Morris Creek	From the New Haven Harbor near Lighthouse Point Beach upstream to saltwater limit above Route 337, East Haven/New Haven	0.02 sq. miles	Aquatic life, recreation and shellfish-unassessed	Dissolved oxygen, nutrient/eutrophication, biological indicators, oil and grease, PCBs	Urban Runoff/Stormwater runoff, illicit discharge, permit source, failing septic system, nuisance wildlife/pets, other

The surface water classifications currently assigned to City watercourses are defined below.

Class A

Surface water is known or presumed to meet Water Quality Criteria which support designated uses, which may include potential drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other legitimate uses, including navigation.

Class SA

Designation given to coastal and marine surface waters that are known or presumed to meet Water Quality Criteria which support designated uses, which may include marine fish, shellfish and wildlife habitat, shellfish harvesting for direct human consumption, recreation and all other legitimate uses such as navigation.

Class SB

Designation given to coastal and marine surface waters that are known or presumed to meet Water Quality Criteria which support designated uses, which may include marine fish, shellfish and wildlife habitat, shellfish harvesting for transfer to approved areas for purification prior to human consumption, recreation, industrial and all other legitimate uses such as navigation.

(1) Public Education and Outreach

This minimum control measure outlines a program to communicate common sources of stormwater pollution and the impacts of polluted stormwater to the public. This will be done through distributing educational materials to the community and conducting outreach activities. The following BMPs and implementation schedule serve as the City of New Haven's MS4 Public Education Program.

Goals:

- Raise public awareness that polluted stormwater runoff is the most significant source of water quality problems;
- Motivate residents to use Best Management Practices (BMPs) that reduce polluted stormwater runoff; and
- Reduce polluted stormwater runoff in City as a result of increased awareness and utilization of BMPs.

1.1 Implement public education program

The City of New Haven will collect and distribute stormwater educational materials that, at a minimum, address the impacts of the following on water quality: pet waste, impervious cover, application of fertilizers, pesticides, and herbicides, and illicit discharges and improper disposal of wastes into the MS4. The City will utilize resources available from agencies such as UCONN's NEMO program, CT DEEP, and USEPA to develop these materials and promote the availability of these materials through the following means:

- Prominent display on City website
- Signage at green stormwater infrastructure locations
- Promotion at City public meetings, hearings, and other public events by City staff.
- Promotion through Site Plan Review and Building Department materials
- Inclusion of appropriate stormwater BMPs in the City's Climate and Sustainability Framework

The City will link its website (www.cityofnewhaven.com) to UConn NEMO's comprehensive online library of stormwater educational material along with other relevant sources of information. The City will also provide materials in a printed format to be on display in public locations within City Hall and the Ives Main Branch Library.

Additional targeted outreach efforts will be completed by the Engineering Department to educate New Haven K-12 students on the basics of stormwater management, the need for household BMPs, the effects of stormwater pollution, and the effects of climate change.

The City of New Haven will coordinate with the Regional Water Authority, the Greater New Haven Water Pollution Control Authority, City Departments, and other appropriate agencies to ensure that all required topics listed in this plan are covered and tracked on an annual basis.

1.2 Address education and outreach for pollutants of concern

The City of New Haven will distribute information on common sources of phosphorus, nitrogen, bacteria, and mercury pollution and how to prevent or reduce the amount reaching the MS4 and discharging into waterways.

The table below shows additional topics to be covered to address the phosphorus, nitrogen, bacteria, and mercury impairments that exist in New Haven.

Phosphorus	Nitrogen	Bacteria	Mercury
Septic systems	Septic systems	Septic systems	Thermometers
Fertilizer use	Fertilizer use	Sanitary cross connections	Thermostats
Grass clippings and leaves management	Grass clippings and leaves management	Waterfowl	Fluorescent lights
Detergent use	Discharge of sediment (to which Nitrogen binds) from Construction sites	Pet waste	Button cell batteries
Discharge of sediment (to which Phosphorus binds) from Construction sites	Other erosive surfaces	Manure piles associated with livestock and horses	Thermometers
Other erosive surfaces			

Public outreach and education schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Implement public education program	Engineering Department/City Engineer	July 1, 2018 and continue until permit expires	Number of links to resources Number of Public Outreach Opportunities Number of People Reached
Address education/outreach for pollutants of concern	Engineering Department/City Engineer	July 1, 2018 and continue until permit expires	Number of People Reached

(2) Public Involvement and Participation

This minimum control measure identifies the process for public involvement and participation in the City's stormwater management efforts.

Goals:

- Involve the community in planning and implementing the City's stormwater management activities.
- Provide a minimum 30 day notice to the public for this plan and annual reports.

2.1 Comply with public notice requirements for the Stormwater Management Plan and Annual Reports

The City of New Haven will publish a public notice on its website (www.cityofnewhaven.com). The notice will provide a contact name, phone number, address, and email to whom the public can send comments. Additionally, this plan and the Annual Reports will be publicly accessible on the web (www.cityofnewhaven.com) and in the City of New Haven's Hall of Records. The public notice will allow for a 30-day comment period, at a minimum.

Public involvement and participation schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Comply with public notice requirements for the SMP and Annual Reports	Engineering Department/City Engineer	July 1, 2017 and continue until permit expires	Plans publicly available Notices Published

(3) Illicit Discharge Detection and Elimination

This minimum control measure outlines a program to detect and eliminate current illicit discharges to the MS4 and prevent further illicit discharges in the future. Illicit discharge refers to any unpermitted discharge to waters of the state that does not consist entirely of stormwater or uncontaminated ground water except those discharges identified in Section 3(a)(2) of the general permit. -All activities for this measure will be completed in the City of New Haven's priority areas (urbanized area, catchment areas with directly connected impervious area (DCIA) > 11%, and outfalls that discharge to impaired waters).

Goal:

Find the source of any illicit discharges; eliminate those illicit discharges; and ensure ongoing screening and tracking to prevent and eliminate future illicit discharges.

3.1 Develop written IDDE plan

The City of New Haven will develop a written IDDE plan to detect, locate and eliminate illicit discharges (to the maximum extent practicable) from the MS4 within New Haven's priority areas. The IDDE plan will provide enforceable legal authority to eliminate illicit discharges, assign responsibilities, and develop a citizen reporting program. The plan will also outline the outfall screening and IDDE protocols consistent with Appendix B of the MS4 General Permit to identify, prioritize, and investigate MS4 catchments for suspected illicit discharge of pollutants. Also, the IDDE plan will outline follow-up screening and illicit discharge prevention procedures.

3.2 Develop list and map of all MS4 outfalls and interconnections in priority areas

The City of New Haven will complete a database of all stormwater discharges from a pipe or conduit located within and owned or operated by the municipality and all interconnections with other MS4s. Each entry will include:

- a. Type, material, size, shape and location (identified with a latitude and longitude) of conveyance, outfall or channelized flow (e.g. 24" concrete pipe);
- b. the name, water body ID and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;
- c. if the outfall does not discharge directly to a named waterbody, the name and water body ID of the nearest named waterbody to which the outfall eventually discharges;
- d. the name of the watershed, including the subregional drainage basin number (available from CT ECO at www.cteco.uconn.edu) in which the discharge is located;
- e. date of most recent inspection of the outfall, the condition, and any indicators of potential non-stormwater discharges as of most recent inspection;

The database will be exported into excel format for annual reports.

The database will be kept up-to-date through a GIS program managed by the Engineering Department. Any changes identified through either department operations and/or site plan reviews will be updated in the GIS no less frequently than quarterly.

3.3 Develop citizen reporting program

The City of New Haven utilizes a web-based communications platform called SeeClickFix for citizen reporting of a host of non-emergency issues. Citizens post their issue of concern to SeeClickFix including location, date, time, description. The City can then track, manage, and reply to these posts, ultimately allowing for better transparency, collaboration, and cooperation. This tool is already utilized for our catch basin cleaning program and can easily be expanded and used to report suspected illicit discharge into storm sewer system.

The City's Engineering Department will affirmatively investigate and eliminate any illicit discharges for which a time and location of discharge are provided. The reported outfall or manhole will promptly be inspected and further action will be taken according to the requirements of the written IDDE program. All citizen reports and responses will be included in the City's annual report.

3.4 Establish legal authority to prohibit illicit discharges

The City of New Haven will update the necessary and enforceable legal authority by ordinance or any other means to eliminate illicit discharges. The authority will:

- a. prohibit illicit discharges to its storm sewer system and require removal of such discharges consistent with the deadlines outlined in the MS4 general; and
- b. authorize the investigation of suspected illicit discharges and elimination of illicit discharge, including from properties not owned or controlled by the MS4 that discharge to the MS4
- c. control the discharge of spills and prohibit the dumping or disposal of materials including, but not limited to, residential, industrial and commercial wastes, trash, used motor vehicle fluids, pesticides, fertilizers, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4; and
- d. authorize appropriate enforcement procedures and actions;
- e. authorize fines or penalties and/or recoup costs incurred by the permittee from anyone creating an illicit discharge or spilling or dumping.

3.5 Develop record keeping system for IDDE tracking

The City of New Haven will keep a record of illicit discharge abatement activities including location (including latitude and longitude or address), description, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair and responsible party.

In addition, the City will develop and maintain an SSO inventory that records the location, date and time of occurrence, estimated volume of discharge, a description of known or suspected cause, and details about mitigating measures including dates of implementation.

This inventory will also:

- include all known SSOs to their MS4 in the past 5 years (July 1, 2012 – June 30, 2017);
- continue to be updated to track future SSOs; and
- be included in Annual Reports.

3.6 Address IDDE in areas with pollutants of concern

The City of New Haven will identify which areas in the City are most likely to contribute nitrogen, phosphorus, and bacteria to the MS4. This assessment will consider: historic on-site sanitary system failures, proximity to bacterial

impaired waters, low infiltrative soils, and shallow groundwater. Any areas determined to have a high potential for septic system failure will be reported to the Health Department for corrective action.

3.7 Detailed MS4 infrastructure mapping

The City of New Haven will continue to revise a detailed map of the MS4 to include:

- Components of the MS4 within priority areas:
 - Outfalls & receiving waters;
 - Pipes; open channel conveyances; catch basins; manholes;
 - Interconnections with other MS4s and other storm sewer systems;
 - Municipally-owned stormwater treatment structures (e.g. detention & retention ponds, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, or other systems);
 - Catchment delineations for each outfall;
 - Impaired water bodies identified by name and use impairment as defined by the most recent integrated water quality report;
 - Municipal sanitary sewer system (if available);
 - Municipal combined sewer system (if applicable).

The City will update the map as new information becomes available and will report on the progress of the development of this map in the annual report.

Illicit discharge detection and elimination schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Develop written IDDE program	Engineering Department/City Engineer	July 1, 2018	Completed Plan Number IDDE inspections undertaken per plan
Develop list and maps of all MS4 stormwater outfalls in priority areas	Engineering Department/City Engineer	July 1, 2019	Completed Map (GIS)
Develop citizen reporting program	Engineering Department/City Engineer	July 1, 2018	Citizen reporting program posted to website
Establish legal authority to prohibit illicit discharges	Engineering Department/City Engineer	July 1, 2018	Ordinance amendment passed as necessary
Develop record keeping system for IDDE tracking	Engineering Department/City Engineer	July 1, 2017	Completed and operational record keeping system
Address IDDE in areas with pollutants of concern	Engineering Department/City Engineer	July 1, 2018	Number of Areas Identified
Detailed MS4 infrastructure mapping	Engineering Department/City Engineer	July 1, 2020	Completed Map (GIS)

(4) Construction Site Stormwater Runoff Control

This minimum control measure outlines procedures for minimizing polluted stormwater runoff from activities that disturb one or more acres of land. In the City of New Haven, this is determined on a site by site basis.

Goal:

Minimize polluted stormwater runoff from construction sites and prevent it from carrying sediment into waterways via MS4 infrastructure.

4.1 Implement, upgrade and enforce land use regulations to meet requirements of MS4 general permit

The City of New Haven enacted Soil Erosion and Sediment Control regulations (SESC) in June 1993 in accordance with the provisions of Public Act 83-388 entitled "An Act Concerning Soil and Erosion and Sediment Control" and Sections 8-2 and 8-25 of the Connecticut General Statutes. These regulations are in Section 58 of the Zoning Ordinance. A copy of these regulations is available at the following website

(https://www.municode.com/library/ct/new_haven/codes/zoning?nodeId=ZOOR_ARTVIOTDI_S58SOERSECO)

The City of New Haven will confirm and revise its land use regulations, as necessary, to establish the legal authority to control stormwater runoff from construction sites by requiring:

- a. developers, construction site operators, or contractors maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the Connecticut Stormwater Quality Manual, and all stormwater discharge permits issued by the DEEP within the municipal or institutional boundary pursuant to CGS 22a-430 and 22a-430b;
- b. the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary by the City of New Haven;
- c. the City is authorized to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations, ordinances or programs or institutional requirements related to the management of the City's MS4. Inspections shall be conducted, where allowed, to inventory the number of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive drainage from the permittee's MS4;
- d. the owner of a site seeking development approval from the City shall provide and comply with a long term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from the City's MS4 including short-term and long-term inspection and maintenance measures to be implemented by the private owner; and
- e. the City of New Haven will control, through interagency or inter-jurisdictional agreements, the contribution of pollutants between the permittee's MS4 and MS4s owned or operated by others.

4.2 Develop and implement plan for interdepartmental coordination of site plan review and approval

The City of New Haven has a formal site plan review that occurs approximately every 2 or 3 weeks to review proposed site development plans. Site Plan Review is attended by members of multiple city departments including City Plan Department, Engineering Department, Building Department, Parks Department, and Transportation, Traffic, and Parking Department. All site plans are reviewed by the site plan review committee prior to their approval to go in front of the City Plan Commission.

4.3 Review site plans for stormwater quality concerns

The City of New Haven conducts site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality on sites with soil disturbance of one half acre or more. The City of New Haven will also conduct site inspections to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures and take enforcement action when necessary.

4.4 Conduct site inspections

The City of New Haven will perform construction site inspections and take enforcement actions if necessary to ensure the adequacy of the installation, maintenance, operation, and repair of all construction and post-construction runoff control measures.

4.5 Implement procedure to allow public comment on site development

New Haven's procedure for public involvement in proposed and ongoing development and land disturbance activities is as follows:

The City Plan Commission may determine that public hearing is necessary for any SESC Plan. The Commission has discretions for determining when to require a public hearing; one factor is the receipt of public comments on a SESC Plan. If a public hearing is required, then public notice will be placed in the newspaper in accordance with SESC regulations. The applicant is also required to give written notice to adjacent land owners within 200 feet. All applications, maps, and documents related to the public hearing shall be open for public inspection at the City Plan Department at least 15 days prior to the public hearing.

4.6 Implement procedure to notify developers about DEEP construction stormwater permit

The City of New Haven notifies developers and contractors of their potential obligation to obtain authorization under DEEP’s General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (construction general permit) if their project disturbs more than 1 acre of land and results in a point source discharge to Connecticut surface waters directly or through the MS4. The City of New Haven requires a copy of the Storm Water Pollution Control Plan be submitted to the City Plan Department. The procedure to notify developers of the construction general permit is as follows:

The City of New Haven notifies developers of parcels of at least one acre of land, individually or collectively as part of a larger common plan, of their potential obligation to obtain authorization under the DEEP’s General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (“construction general permit”) during the site plan review process. If an application is submitted to DEEP, the developer is required to submit a copy of the application and resulting Storm Water Pollution Control Plan to the City Plan Department. The contractor is required at all times to conduct his operations in conformity with all Federal and State permit requirements concerning water, air, noise pollution and the disposal of contaminated, or hazardous materials.

Construction site stormwater management schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Implement, upgrade and enforce land use regs to meeting MS4 permit requirements	City Plan Department/City Plan Director	July 1, 2019	Updated SESC regulations
Develop/implement plan for interdepartmental coordination in site plan review and approval	City Plan Department/City Plan Director	July 1, 2017	Site Plan Review applications
Review site plans for stormwater quality concerns	City Plan Department/City Plan Director	July 1, 2017	Site Plan Review applications
Conduct site inspections	City Plan Department/City Plan Director	July 1, 2017	Number of site inspections
Implement procedure to allow public comment on site development	City Plan Department/City Plan Director	July 1, 2017	Number of public meetings
Implement procedure to notify developers about DEEP construction stormwater permit	City Plan Department/City Plan Director	July 1, 2017	Site Plan application Submitted DEEP permits

(5) Post-construction Stormwater Management in New Development or Redevelopment

This minimum control measure outlines the City of New Haven's program to address stormwater runoff from new or re-development projects that disturb one or more acres of land.

Goal:

Mitigate the long-term impacts of new and re-development projects on water quality through proper use of low impact development and runoff reduction practices.

5.1 Update legal authority and guidelines regarding LID and runoff reduction in site development planning

In 2011, the City of New Haven adopted Section 60 of the Zoning Ordinance which requires new and major redevelopment sites to develop a stormwater management plan for their proposed site. The purpose of the ordinance is to protect and preserve the waters of the City from nonpoint sources of pollution through the proper management of stormwater flows and minimization of inputs of suspended solids, pathogens, toxic contaminants, nitrogen, and floatable debris. This ordinance goes beyond the one acre requirement of this BMP as the ordinance pertains to any development or construction disturbing one-half or more acres of total land area on a site. Other triggers of the ordinance are listed below:

- Pertains to any site with one-half acres or more of existing and/or proposed impervious cover;
- Proposes new residential development of three or more units;
- Pertains to any new or expanding industrial or commercial use which increases the amount of onsite impervious surface by more than 500 square feet;
- Pertains to any site within the coastal boundary as defined in section 22a-94 of the General Statutes;
- The commission which has jurisdiction over the application has required submission of a stormwater management plan pursuant to written findings by that commission that the activity proposed in the application has the potential to cause significant nonpoint source pollution to groundwater or surface water drinking supplies, or to Long Island Sound, or any other waters of the state.

The Ordinance includes a retention requirement that meets and often exceeds the water quality volume as defined in the CT Stormwater Quality Manual. A complete copy of the current ordinance is available at the following website

https://www.municode.com/library/CT/new_haven/codes/zoning?nodeId=ZOOR_ARTVIOTDI_S60STMAPL).

In addition, the City of New Haven will be reviewing and updating this Ordinance to provide more guidance to developers and clarify/simplify criteria for approval. During this update, the City will consider the following watershed protection elements to manage the impacts of stormwater on receiving waters:

- a. Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each municipality by minimizing the creation, extension, and widening of parking lots, roads, and associated development and encourage the use of Low Impact Development or green infrastructure practices.
- b. Preserve, protect, create and restore ecologically sensitive areas that provide water quality benefits and serve critical watershed functions. These areas may include, but are not limited to; riparian corridors, headwaters, floodplains and wetlands.

- c. Implement stormwater management practices that prevent or reduce thermal impacts to streams, including requiring vegetated buffers along waterways, and disconnecting discharges to surface waters from impervious surfaces such as parking lots.
- d. Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges.
- e. Implement standards to protect trees, and other vegetation with important evapotranspirative qualities.
- f. Implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.
- g. Coordinate with state or local health officials to ensure no interference with performance of on-site septic systems.
- h. Limit turf areas.

5.2 Implement long-term maintenance plan for stormwater basins and treatment structures

The City of New Haven does not currently own any stormwater basins and/or treatment structures. If the City acquires these in the future, the City will develop a maintenance plan for retention / detention ponds and stormwater treatment structures that it owns or over which it holds an easement or other authority and that are located in the City’s priority areas to ensure their long-term effectiveness. This plan will require an annual inspection of those retention / detention ponds and stormwater treatment structures and removal of accumulated sediment and pollutants in excess of 50% design capacity.

5.3 Directly Connected Impervious Area (DCIA) mapping

The City of New Haven will follow guidance provided by DEEP and UConn CLEAR to calculate the Directly Connected Impervious Area (DCIA) that contributes stormwater runoff to each of its MS4 outfalls. Progress on this task will be documented in each Annual Report until completion.

5.4 Address post-construction issues in areas with pollutants of concern

For areas contributing to waters where **Nitrogen, Phosphorus** or **Bacteria** is a Stormwater Pollutant of Concern and erosion or sedimentation problems are found during the annual inspections conducted under the long-term maintenance plan described in BMP 5.2, the City of New Haven will prioritize those areas for the DCIA retrofit program under minimum control measure 6 – Pollution Prevention/Good Housekeeping.

Post-construction stormwater management schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Establish or update legal authority and guidelines regarding LID and runoff reduction in site development planning	City Plan Department/City Plan Director	July 1, 2021	Updated Section 60 of Zoning Ordinance
Enforce LID/runoff reduction requirements for development and redevelopment projects	City Plan Department/City Plan Director	July 1, 2021	Number of Stormwater Management Plans submitted by developers

Implement long-term maintenance plan for stormwater basins and treatment structures	Engineering Department/City Engineer	July 1, 2019	Maintenance Plan, if applicable
Complete DCIA mapping	Engineering Department/ City Engineer	July 1, 2020	GIS Map Table of DCIA for each outfall
Address post-construction issues in areas with pollutants of concern	Engineering Department/City Engineer	July 1, 2019	Annual inspections, if applicable

(6) Pollution Prevention / Good Housekeeping

This minimum control measure outlines a program to mitigate the impact of City operations and maintenance on City owned and/or operated properties and the MS4 itself to water quality.

<p>Goal:</p> <p>Prevent or reduce pollutant runoff as a result of municipal operations.</p>
--

The City of New Haven will implement an operations and maintenance program to prevent or reduce pollutant runoff from City facilities and protect water quality.

6.1 Develop and implement formal employee training program

The City of New Haven will continue its MS4 training program for City employees to increase awareness of water quality issues. Training will include:

- Standard operating procedures consistent with the MS4 general permit;
- General goals and objectives of this Stormwater Management Plan;
- Identification and reporting of illicit discharges and improper disposal; and
- Spill response protocols and responsibilities.

These trainings may also include regional or statewide trainings coordinated by UConn CLEAR or others.

The training program will be managed by the Director of the Department of Public Works and the Director of Parks, Recreation, and Trees for their respective departments, with support and help from the Engineering Department.

6.2 Implement MS4 property and operations maintenance

New Haven-owned or -operated properties, parks, and other facilities that are owned, operated, or otherwise the legal responsibility of New Haven will be maintained so as to minimize the discharge of pollutants to its MS4. Such maintenance will include, but not be limited to:

(i) Parks and open space

New Haven will optimize the application of fertilizers by municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance. Optimization practices considered may include:

- conducting soil testing and analysis to determine soil phosphorus levels,
- the reduction or elimination of fertilizers,
- reduction of fertilizer usage by adhering to the manufacturers' instructions,
- use of alternative fertilizers forms (i.e. products with reduced, slow-releasing, or insoluble phosphorus compositions),
- proper storage and application practices (i.e. avoid impervious surfaces),
- application schedule (i.e. appropriate season or month) and timing (i.e. coordinated with climatic conditions to minimize runoff potential);
- standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides in compliance with applicable state and federal laws;
- evaluating reduced mowing frequencies and use of alternative landscaping materials like drought resistant and native plantings;
- establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number).

New Haven will establish practices for the proper disposal of grass clippings and leaves at New Haven-owned lands. Clippings shall be composted or otherwise appropriately disposed. Clippings will not enter the MS4 system or waters of the state.

(ii) Pet waste management

New Haven will identify locations where inappropriate pet waste management practices are immediately apparent and pose a threat to receiving water quality due to proximity and potential for direct conveyance of waste to its storm system and waters. In such areas, New Haven will, implement targeted management efforts such as public education and enforcement (e.g. increased patrol for violators).

In New Haven-owned recreational areas where dog walking is allowed, the City will install educational signage and disposal receptacles (or require carry-out).

New Haven will document its efforts in its annual reports. New Haven should consider including information regarding the scope and extent of its education, compliance, and enforcement efforts (including the number of violations pursued and fines levied or other enforcement taken).

(iii) Waterfowl management

New Haven will identify lands where waterfowl congregate and feeding by the public occurs.

To raise awareness regarding the water quality impacts, New Haven will install signage or use other targeted techniques to educate the public about the detrimental impacts of feeding waterfowl (including the resulting feces deposition) and discourage such feeding practices.

New Haven will also implement practices that discourage the undesirable congregation of waterfowl in these areas, or otherwise isolate the direct drainage from these areas away from its storm system and waters.

(iv) New Haven Buildings and facilities (schools under the jurisdiction of New Haven, City offices, police and fire stations, pools, parking garages and other New Haven-owned or operated buildings or utilities)

The City of New Haven will:

- evaluate the use, storage, and disposal of both petroleum and non-petroleum products and ensure, through employee training, that those responsible for handling these products know proper procedures;
- ensure that Spill Prevention Plans are in place, if applicable, and coordinate with the fire department as necessary;
- develop management procedures for dumpsters and other waste management equipment;
- sweep parking lots and keep areas surrounding the facilities clean to minimize runoff of pollutants;
- ensure that all interior building floor drains are not connected to the MS4 and are appropriately permitted.

(v) Vehicles and Equipment

The City of New Haven will

- establish procedures for the storage of New Haven-owned or -operated vehicles;
- require vehicles with fluid leaks to be stored indoors or in contained areas until repaired;
- evaluate fueling areas owned by New Haven and used by New Haven owned or -operated vehicles and if possible, place fueling areas under cover in order to minimize exposure;
- establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters;
- ensure any interior floor drains are appropriately permitted.

(vi) Leaf Management

The City of New Haven will establish and implement procedures to minimize or prevent the deposition of leaves in catch basins, streets, parking lots, driveways, sidewalks or other paved surfaces that discharge to the MS4. Such procedures shall also apply to leaves collected by the City.

6.3 Implement coordination with interconnected MS4s

The City of New Haven will coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

6.4 Develop and implement a program to control other sources of pollutants to the MS4

The City of New Haven will develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by a CT DEEP stormwater permit.

6.5 Evaluate additional measures for discharges to impaired waters

(i) For waters for which **Nitrogen** or **Phosphorus** is a Stormwater Pollutant of Concern:

On New Haven-owned or -operated lands, the City will implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Each Annual Report will discuss the actions taken to implement this policy with an estimate of fertilizer and turf reduction.

(ii) For waters for which **Bacteria** is a Stormwater Pollutant of Concern:

On New Haven-owned or -operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), the City will develop, fund, implement, and prioritize a retrofit or source management program to correct the problem(s) within a specific timeframe. Each Annual Report will identify problem areas for which a retrofit or source management program were developed, the location of the closest outfall monitored in accordance with Section 6(j), the cost of such retrofit or program, and the anticipated pollutant reduction. On New Haven-owned or -operated lands, prohibit the feeding of geese or waterfowl and implement a program to manage geese and waterfowl populations. Each Annual Report will discuss the actions taken to implement this program.

6.6 Track projects the disconnect DCIA

The City of New Haven will annually track the total acreage of Directly Connected Impervious Area (DCIA) that is disconnected from the MS4 as a result of redevelopment or retrofit projects within the City. For each retrofit/redevelopment project, New Haven will document the amount of existing DCIA that is disconnected. A new application cover sheet will be created for developers to use when submitting their Stormwater Management Plans as required by Section 60 of the Zoning Ordinance. This cover sheet will summarize and quantify the impervious surface area that has been disconnected from the storm sewer system.

The total amount of disconnected DCIA will be reported each year in the Annual Report. Starting on July 1, 2021, the City's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. Updates will be provided on this goal in the annual report. The City will also incorporate all DCIA disconnections which occurred in the City since July 1, 2012 towards meeting this goal.

6.7 Develop and implement an infrastructure repair, rehabilitation and retrofit program

The City of New Haven will continue a program to identify MS4 structures to repair, rehabilitate, or upgrade to reduce or eliminate the discharge of pollutants into water bodies. This program will be responsive to new information on outfalls discharging pollutants, impaired waters, inspections, or observations made during outfall mapping under the IDDE section of this plan.

6.8 Develop and implement plan to identify and prioritize retrofit projects

The City of New Haven will develop a Retrofit Project Plan to identify and prioritize potential DCIA disconnection projects. Prioritization will be based on several factors, including whether the project lies within one of the MS4

priority areas (urbanized area, DCIA > 11%, discharge to impaired waters). New Haven will include in its annual report for the third year of the permit (2020-2021) its identification and prioritization process, a rationale for the selection of projects to be implemented, and the total acres of DCIA to be disconnected upon implementation. The implementation of projects in this plan will begin by June 30, 2022.

6.9 Develop and implement street sweeping program

The City of New Haven will implement a program to provide for regular inspection and maintenance of New Haven-owned or -operated streets, parking areas and other MS4 infrastructure.

The City will establish and implement procedures for sweeping City-owned or operated streets and parking lots. All streets and parking lots within the MS4 Priority Areas will be inspected, swept and/or cleaned (as necessary) at least once per year in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.). The procedures shall also include more frequent inspections, cleaning and/or sweeping of targeted areas determined by the City to have increased pollutant potential based on the presence of active construction activity or other potential pollutant sources. The City will identify such potential pollutant sources based upon surface inspections, catch basin cleaning or inspection results, land use, winter road deicing and/or sand application, impaired or TMDL waters or other relevant factors as determined by New Haven. If wet dust suppression is conducted, the use of water will be minimized such that a discharge of excess water to surface waters and/or the storm sewer system does not occur.

For streets and parking lots outside the MS4 Priority Areas, including any rural uncurbed streets and parking lots with no catch basins, New Haven will either meet the minimum frequencies above, or develop and implement an inspection, documentation and targeted sweeping and/or cleaning plan for those areas by June 30, 2018 and submit such plan with its year one Annual Report. For new and redeveloped municipal parking lots, New Haven will evaluate options for reducing stormwater runoff to surface waters and/or the storm sewer system by the installing pervious pavements and/or other measures to promote sheet flow of stormwater.

- a. New Haven will ensure the proper disposal of street sweepings in accordance with DEEP policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.
- b. New Haven will document results of its sweeping program in its annual reports including: a summary of inspection results, curb miles swept, dates of cleaning, volume or mass of material collected, and method(s) of reuse or disposal. New Haven will also include documentation of any alternate sweeping plan for rural uncurbed streets and any runoff reduction measures implemented.

6.10 Develop and implement catch basin cleaning program

The City of New Haven will conduct routine cleaning of all catch basins and track catch basin inspection observations. Utilizing information compiled through its inventory of catch basins, operational staff and public complaints, New Haven will optimize routine cleaning frequencies for particular structures or catchment areas as follows to maintain acceptable sediment removal efficiencies:

- a. Inspect all New Haven-owned catch basins within MS4 Priority Areas at least once by June 30, 2020. Catch basins outside the MS4 Priority Areas shall be inspected by June 30, 2022.
- b. Prioritize inspection and maintenance for New Haven-owned catch basins located near impaired waters and construction activities (roadway construction, residential, commercial, or industrial development or

redevelopment). New Haven will clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.

- c. Establish a schedule such that the frequency of routine cleaning will ensure that no catch basin at any time will be more than fifty (50) percent full. A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.
- d. If a catch basin sump is more than fifty (50) percent full during two consecutive routine inspections/cleaning events, New Haven will document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the maximum extent practicable, abate contributing sources. New Haven will describe any actions taken in its Annual Report.
- e. New Haven will detail its plan for optimizing catch basin cleaning, inspection plans, and its schedule for gathering information to develop the optimization plan in its first annual report. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4. New Haven will keep a log of catch basins cleaned or inspected.
- f. New Haven will report in each Annual Report the total number of catch basins, number inspected, number cleaned, the total volume or mass of material removed from all catch basins and, if practicable, the volume or mass of material removed from each catch basin draining to water quality limited waters.

6.11 Develop and implement snow management practices

(i) Deicing Material Management

New Haven will develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; consider means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and consider opportunities for use of alternative materials; for any exterior containers of liquid deicing materials installed after July 1, 2017, New Haven will provide secondary containment of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger, without overflow from the containment area.

(ii) Snow and Ice Control Practices

New Haven will implement and refine its standard operating practices regarding its snow and ice control to minimize the discharge of sand, anti-icing or de-icing chemicals and other pollutants (while maintaining public safety).

New Haven will establish goals for the optimization of sand and/or chemical application rates through the use, where practicable, of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals.

New Haven will maintain records of the application of sand, anti-icing and/or de-icing chemicals to document the reduction of chemicals to meet established goals.

New Haven will ensure the proper training for deicing applications for municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance.

New Haven will manage and dispose of snow accumulations in accordance with DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater).

In its Annual Report, New Haven will document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of deicing materials used; lane-

miles treated; total amount of each deicing material used; type(s) of deicing equipment used; any changes in deicing practices (and the reasons for the change); and snow disposal methods.

Pollution prevention/ good housekeeping schedule

BMP	Lead department / individual	Month / year of implementation	Measurable goal
Develop/implement formal employee training program	Department of Public Works/Director and Department of Parks Recreation and Trees/Director	July 1, 2017	Training events established
Implement MS4 property and operations maintenance	Directors of Public Works, Parks, and Engineering	July 1, 2017	Fertilizer applications, signs established, enforcement actions, property maintenance plans
Implement coordination with interconnected MS4s	Engineering Department/City Engineer	July 1, 2017	Contacts with interconnected MS4 agencies
Develop/implement program to control other sources of pollutants to MS4	Engineering Department/City Engineer	July 1, 2017	Completed Plan
Evaluate additional measures for discharges to impaired waters	Engineering Department/City Engineer	July 1, 2017	Additional measures plans implemented
Track projects that disconnect DCIA	Engineering Department/City Engineer	July 1, 2017	Number of DCIA disconnection projects
Develop/implement infrastructure repair/rehab program	Engineering Department/City Engineer	July 1, 2017	Number of structures repaired
Develop/implement plan to identify/prioritize retrofit projects	Engineering Department/City Engineer	July 1, 2020	Number of retrofit projects completed
Develop/implement street sweeping program	Department of Public Works/Director	July 1, 2017	Number of street miles swept
Develop/implement catch basin cleaning program	Engineering Department/City Engineer	July 1, 2017	Number of Catch Basins cleaned
Develop/implement snow management practices	Department of Public Works/Director	July 1, 2017	Snow management practices implemented

Outfall Monitoring

The City of New Haven will monitor and investigate all MS4 outfalls that discharge to impaired waterbodies by the end of the permit term. All the waterbodies within New Haven's city boundary are impaired and therefore all outfalls will be screened for impairments. At a minimum, outfalls will be screened for nitrogen, phosphorus and bacteria.

Monitoring will begin on outfalls that discharge to the Mill River as the drainage area of this waterbody is mostly contained within New Haven's city limits. Then outfalls within the West River watershed will be screened, followed by outfalls within the Quinnipiac River. Once half of all outfalls discharging to impaired waterbodies have been screened, the 6 outfalls contributing the highest level of pollutants will be identified and screened on an annual basis.

Based on the screening results, the City will investigate the drainage areas of outfalls that are contributing to the impairment. The investigations may consider land use or development patterns, business or commercial activities, industrial activities, DCIA, natural contributors, MS4 maintenance issues, residential activities, or anything else potentially contributing to the source of the impairment.

Based on results of the drainage area investigations, the City will implement measures to address sources of the impairments including the specific impaired waters provisions described within the permit control measures.

New Haven has approximately 280 stormwater outfalls. Therefore, in order to meet the permit requirements, approximately 50 outfalls per year will be screened in the first three years and 70 outfalls per year the following two years.

Plan Amendments

The City of New Haven will amend the SMP whenever:

- (1) there is a change which has the potential to cause pollution of the waters of the state; or
- (2) the actions required by the Plan fail to prevent pollution of the waters of the state or fail to otherwise comply with any other provision of this general permit; or
- (3) the Commissioner requests modification of the Plan.

Stormwater Management Plan Signature

Chief Elected Official/
Principal Executive Officer

Title

Date

Stormwater Management Plan Engineering Certification

I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, submitted to the Commissioner by [INSERT NAME OF REGISTRANT] for an activity located at or within [NAME OF MUNICIPALITY OR ADDRESS OF THE REGISTERED ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been created, initiated or maintained and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law.

Name

Title

Company

Date